ABSTRACT

A system and method for distributing gas to a substrate in a dry etch chamber make use of different flow channels to distribute the gas to different portions of a substrate. A first flow channel can be oriented to distribute gas to an inner portion of the substrate. A second flow channel can be oriented to distribute gas to an outer portion of the substrate. With different flow channels, the system and method enable separate control of gas distribution for different portions of the substrate. In particular, the flow channels allow separate control of gas flow rate, concentration, and flow time for different areas of the substrate. In this manner, gas distribution can be selectively controlled to compensate for different etch rates across the substrate surface. Also, gas distribution can be controlled as a function of etch rate patterns exhibited by different etch gasses used in successive process steps. Thus, etch uniformity can be enhanced, leading to improvement in the quality of the overall fabrication process. In a semiconductor fabrication processes, enhanced etch uniformity can lead to increased device yield.

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